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HOUSE FOR THE BLIND

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est safeguards of the community's morals. It takes the place of drink and many other forms of dissipation. This the Association game does to a goodly degree for England.

In conclusion, then, it seems to me, that the great objection to our American game of football is not to its sprains and broken bones, or even its foul play, bad and incurable as that seems to be, but rather its inadequacy. It is played by only five or ten per cent. of the student body, and for the rest it is rather a deterent than a promotor of exercise. It requires too much of the time and interest of the player, and makes him a semi-professional. It does not reach at all that part of the student body that needs the exercise the most. It is not a preparation for after life inasmuch as it is dropped as soon as college days are over. The season in which it can be played is only half as long as the season of Association football. In view of these facts, it seems to me that every lover of sport should view with satisfaction the very rapid spread of Association football among our high schools and colleges this year.

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PHYSICAL EDUCATION OF THE BLIND.

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Physical education among the blind is practically in its infancy. Most schools have physical directors, but the time allotted to each class is insufficient, and the amount of money expended is inadequate for the needs. In this institution each class meets four times a week; two periods for a half hour, the other for an hour. The necessity for small classes makes it difficult to give to each class or individual time enough in the gymnasium to build up a vigorous physique. The conditions and environment are such as to make the blind prone to inactivity, and they need more systematic exercise than the seeing child. Frequently the disease that deprived them of sight has also left them with poor physical constitutions, and marked physical defects.

Most of the students, boys and girls alike, are ambitious to attain good bodily proportions, proven by the intense interest shown in the physical examination, most of the students remembering every measurement during the summer vacation. The examination is thorough with the boys; only the weight, height, and lung capacity of the girls are recorded. As a result of examination of two hundred pupils, about sixty per cent. were found to have good muscular development, attained by exercise before becoming entirely blind, or, by working on a farm. Fifty per cent. of the boys are farmers' sons, and these, though some of them may have been blind since birth, and a few others, have good physiques on which to build. About fifty per cent. of the high school boys, and a few of the grades' school boys, or about 12 per cent. of the total number of boys are surprisingly strong and robust. One of these high school boys was dismayed, on coming back to school, that he could do only forty swinging push-ups on the parallels, when he could do forty-five last year.

Principal defects noted, —

	No. of cases.
Round shoulders, and sunken chest, marked	4
Round shoulders, not so marked	25
Scoliosis, marked with uneven shoulders	5
Scoliosis, not so marked	9
Flat foot	12
Poke neck (head too far forward)	13
Partial paralysis	5
Hips too far forward	14

Many pupils, of course, have combinations of these defects, and these have been counted separately in the above. Special exercises are prescribed for each one of these pupils.

The food, as a general rule, is plain and wholesome. Parents are apt to be over indulgent, and often children are very much spoiled, in regard to eating, before they come to the school. The younger pupils are especially prone to round shoulders, leaning far forward over the plate, the more easily to transfer the food to the mouth without spilling. I think that this is one of the principal causes of such faulty posture. They are constantly re-

minded to sit up straight, with head and shoulders back, also how to walk correctly. Good results are beginning to show.

Many of the older boys are absolutely fearless, and have to be watched constantly while in the gymnasium. Most of these would be eager to try a fly-away or giant swing if the director but gave the word. As a result of this fearlessness, many bruises, bumps and cuts need attention, and though cautioned at times to be careful there is no attempt made to quell that spirit of go-at-it-with-a-vim. It is far better for the pupil to sustain a bump occasionally, while romping about in the gymnasium than to helplessly sit moping in a bad posture.

The ones who have been blind only a short time are more inclined to be less active than those who have been blind since birth, and it is difficult to get them to move about rapidly and freely of their own accord. On the other hand, the ones who have been blind the longest are the ones to go at everything with vim and energy, and who are not afraid, except in a few cases, where nothing, apparently, is able to light a spark of normal fire in their minds or bodies. Nature is at fault in some way, and good results are only obtained after long periods of sympathetic, patient teaching in the gymnasium. Dances are given twice each week for the students; one for the girls, and one for the boys. It is seldom that the few collisions result in more than temporary discomfiture. It has been proven here that dancing, in addition to the gymnasium work, overcomes their awkward gait, and tends to develop ease and grace in all movements.

It is interesting to note how well the sense of direction can be developed in the more capable ones, physically; what good form in free, and apparatus work. Considering the fact that it is difficult to teach the kindergartner left from right, forward from sideward, or sideward from upward, the efficiency attained by the older pupils in co-ordination exercises is remarkable.

Classes are arranged according to their physical ability and condition, and not, as is often the custom, to put all seniors together, all juniors together, etc. In this way the director is enabled to work faster and accomplish more in a given time, and, too, students are not forced to try to do exercises beyond their ability.

About forty-five per cent. of the total number of students can see well enough to keep out of danger, and to distinguish large objects rather clearly. These are very useful to the director as leaders. By placing a partly seeing boy or girl every third or fourth one in the line much time and energy is saved the director, who would of necessity have smaller classes, or take the time to continually steer them in the right direction, or, in apparatus work, to patiently place each arm or leg in the proper place, when a short description of the exercise cannot be made clear. By dividing the class into small squads, and appointing a seeing leader for each squad, little trouble is encountered. The running and marching is done with the hands on the shoulders of the one in front, and it is only with much care and patience that the "snap the whip" effect is lost at the corners, because the pupil does not anticipate the sharp corner unless the command be given. The boys are taught military, and the girls German marching, and both boys and girls become fairly accurate. Music is furnished with each class by the older blind boys. Most of the students in the school are taught music, and almost all are able to keep perfect rhythm, in the calisthenic work as well as in the marching.

Physiology is taught in the high school; the principles of anatomy, digestion, circulation, and respiration. Unfortunately no hygiene, or applied physiology or the principles of right living are taught to the younger pupils. The necessity for frequent baths is not inculcated in the minds of the children, and unfortunately the blind, as a class, are inclined to omit the regular bath. The physiology as taught in the high school is of little value from the standpoint of the physical director, and there is no analogy, apparently, between the physiology, as taught, and physical education. In other words, there is no attempt made to develop the "physical conscience," and that is the most important thing of all — to instill into the mind of the child the fact that it is just as much wrong to neglect the ordinary precautions against ill health as it is to lie, steal, or do any other wicked deed.

The gymnasium has a good sized floor space, and is equipped with parallel bars, horizontal bar, horse, poles, ropes, rings, and ladders; dumb-bells, wands, Indian clubs, and rings. In fact, the blind use about all the apparatus that the seeing are accustomed

to. I have often been asked, "Are the blind as good workers on apparatus as the seeing boys." This is a difficult question to answer definitely, but I would say in general that, other things being equal, they are every bit as good. I believe one reason for this is that they do not constantly throw a basket-ball during their spare time in the gymnasium, as many seeing boys do, but instead, practice on apparatus. Several boys are very good at club swinging.

Apparently, the desire for play is even stronger in the blind than in seeing children. I have said that pupils sit quietly for long periods at a time. This is true of a comparatively small number. Movement seems to be the one aim and desire at all times. The older pupils are delighted with a game that would seem "slow" to a seeing class. It is interesting to note how these unfortunate ones become accustomed to the knocks and bumps that some of them are always getting, in spite of all the care and watching they get. A severe bump is considered nothing to prevent the continuance of a game, when a seeing child would at least discontinue the game. Some of the games that can be, and are used, are Guess-ball, Black and White, Wrestling Circle, Cat and Mouse, Statues, Last Couple Out, Passing the bean-bag, or club, with Tug-O'-war, Stick struggle added for the boys.

The necessity for a rational system of physical education taught by a man who is willing to spend much time and energy in the preparation for the special work for the blind, is no longer questioned. With all their possibilities and capabilities these unfortunate pupils need more teaching, care, and guidance than the seeing child. Their sensitiveness and other idiosyncrasies need a well trained, sympathetic hand to lead them ever onward and upward to the true education of the mind and body, as near to the ideal, morally, mentally, physically, as it is possible for them to attain.

BLOOD PRESSURE. II.*

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Sphygmographic Experiments on Posture.

In order to supplement the work already done upon the special blood variations due to changes in posture and at the same time to obtain a graphic record of the blood pressure and the pulse rate together, the writer continued his experiments with the sphygmograph.

Apparatus: — The ordinary type of sphygmograph was found to be inadequate, as the variations in position often changed the tention of the pad of the instrument on the artery and apparent variations in pressure were recorded which were palpable errors. To correct this an arm rest and a Van Santvoord attachment were added. This did not suffice, so a special adaptation was arranged. The wrist was enclosed in a leather armlet similar to the Janeway modification of the Cooke blood pressure instrument. This was pierced to admit a tube connected with a small rubber bag, 4 cm. long, which was arranged to be bound tightly to the radial sulcus. The tube was closed and led under the pad of the sphygmograph. The armlet, tube and sphygmograph were all attached to a small rest so that the whole apparatus could be lifted and carried with the person experimented upon. This gave results that were not disturbed by any position and were completely trustworthy.

The width of the ribbon that the usual type of sphygmograph carries is insufficient for this sort of work for the variations are extreme.

The exact arterial pressure cannot of course be read by the instrument of this type; the relative pressures and the variations are shown, however, with great precision.

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*Continued from Dec. Review, 1905, pp. 275-283.